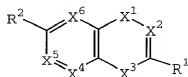


**WHAT IS CLAIMED IS:**

1. A method of treating inosine monophosphate dehydrogenase associated disorders comprising:  
 5 administering a therapeutically effective amount of a compound of formula (I)



(I)

- 10 including isomers, enantiomers, diastereomers, tautomers, pharmaceutically acceptable salts, prodrugs and solvates thereof wherein:
- X<sup>1</sup> is C=O, -S(O)-, or -S(O)<sub>2</sub>-;  
 X<sup>2</sup> is CR<sup>3</sup> or N;
- 15 X<sup>3</sup> is -NH-, -O-, or -S-;  
 X<sup>4</sup> is CR<sup>4</sup> or N;  
 X<sup>5</sup> is CR<sup>5</sup> or N;  
 X<sup>6</sup> is CR<sup>6</sup> or N;
- R<sup>1</sup> is alkyl, substituted alkyl, alkenyl, substituted
- 20 alkenyl, alkynyl, substituted alkynyl, NR<sup>8</sup>R<sup>9</sup>, SR<sup>20</sup>, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heterocycloalkyl, or heteroaryl;
- R<sup>2</sup> is halogen, cyano, nitro, hydroxy, oxo (double bond is no longer present between CR<sup>2</sup> and X<sup>6</sup>), SR<sup>7</sup>, S(O)R<sup>7</sup>,
- 25 SO<sub>2</sub>R<sup>7</sup>, SO<sub>2</sub>NR<sup>8</sup>R<sup>9</sup>, CO<sub>2</sub>R<sup>7</sup>, C(O)NR<sup>8</sup>R<sup>9</sup>, or heteroaryl;
- R<sup>3</sup> is hydrogen, hydroxy, halogen, cyano, CO<sub>2</sub>R<sup>7</sup>, NR<sup>8</sup>R<sup>9</sup>, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heterocycloalkyl or
- 30 heteroaryl;

$R^4$ ,  $R^5$ , and  $R^6$  are independently selected from the group consisting of hydrogen, halogen, nitro, cyano,  $O-R^7$ ,  $NR^8R^9$ ,  $SR^7$ ,  $S(O)R^7$ ,  $SO_2R^7$ ,  $SO_3R^7$ ,  $SO_2NR^8R^9$ ,  $CO_2R^7$ ,  $C(O)NR^8R^9$ ,  $C(O)alkyl$ ,  $C(O)substituted alkyl$ ,  $alkyl$ ,  
 5  $substituted alkyl$ ,  $alkenyl$ ,  $substituted alkenyl$ ,  $alkynyl$  and  $substituted alkynyl$ ;

$R^7$ ,  $R^{10}$ , and  $R^{11}$ , are independently selected from the group consisting of hydrogen,  $alkyl$ ,  $substituted alkyl$ ,  $alkenyl$ ,  $alkynyl$ ,  $cycloalkyl$ ,  $substituted cycloalkyl$ ,  
 10  $C(O)alkyl$ ,  $C(O)substituted alkyl$ ,  $C(O)cycloalkyl$ ,  $C(O)substituted cycloalkyl$ ,  $C(O)aryl$ ,  $C(O)substituted aryl$ ,  $C(O)Oalkyl$ ,  $C(O)Osubstituted alkyl$ ,  $C(O)heterocycloalkyl$ ,  $C(O)heteroaryl$ ,  $aryl$ ,  $substituted aryl$ ,  $heterocycloalkyl$  and  $heteroaryl$ ;

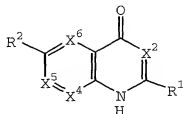
$R^8$  and  $R^9$  are independently selected from the group consisting of hydrogen,  $alkyl$ ,  $substituted alkyl$ ,  $cycloalkyl$ ,  $substituted cycloalkyl$ ,  $alkenyl$ ,  $alkynyl$ ,  $C(O)alkyl$ ,  $C(O)substituted alkyl$ ,  $C(O)cycloalkyl$ ,  $C(O)substituted cycloalkyl$ ,  $C(O)aryl$ ,  $C(O)substituted aryl$ ,  $C(O)Oalkyl$ ,  $C(O)Osubstituted alkyl$ ,  $C(O)heterocycloalkyl$ ,  $C(O)heteroaryl$ ,  $aryl$ ,  $substituted aryl$ ,  $heterocycloalkyl$ , and  $heteroaryl$  or  $R^8$  and  $R^9$  taken together with the nitrogen atom to which they are attached complete a heterocycloalkyl or heteroaryl ring;  
 20

$R^{20}$  is  $alkyl$ ,  $substituted alkyl$ ,  $cycloalkyl$ ,  $aryl$ ,  $substituted aryl$ ,  $heteroaryl$  or  $heterocycloalkyl$ ;

$R^3$  and  $R^1$  may be taken together with the carbon atoms to which they are attached to form a monocyclic or substituted monocyclic ring system of 5 or 6 carbon  
 30 atoms; and

$R^4$  and  $R^5$  may be joined together by the chain  $-O-CH_2-O-$  or  $-O-CH_2-CH_2-O-$ .

2. A method of claim 1 comprising: administering a therapeutically effective amount of a compound of formula (II)

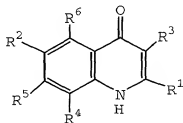


(II)

including isomers, enantiomers, diastereomers, tautomers, pharmaceutically acceptable salts, prodrugs and solvates thereof wherein:

10  $R^2$  is a monocyclic substituted or unsubstituted heteroaryl group.

3. A method of claim 2 comprising: administering a therapeutically effective amount of a compound of formula (III)



(III)

including isomers, enantiomers, diastereomers, tautomers, pharmaceutically acceptable salts, prodrugs and solvates thereof wherein:

$R^2$  is 4-oxazolyl, substituted 4-oxazolyl, 5-oxazolyl, or substituted 5-oxazolyl;

$R^3$  is hydrogen, hydroxy,  $NR^8R^9$ , alkyl of 1 to 4 carbons, alkenyl of 2 to 4 carbons, alkynyl of 2 to 4

carbons, substituted alkyl of 1 to 4 carbons, phenyl, substituted phenyl, cycloalkyl of 5 to 7 carbons, substituted cycloalkyl of 5 to 7 carbons, monocyclic heterocycloalkyl and monocyclic heteroaryl;

5  $R^4$  is hydrogen, halogen, nitro, hydroxy, alkyl of 1 to 4 carbons, cyano,  $CF_3$ ,  $OCF_3$ ,  $OCH_3$ ,  $SCH_3$ ,  $S(O)CH_3$ , or  $S(O)_2CH_3$ ;

$R^5$  is hydrogen, halogen, nitro, hydroxy, alkyl of 1 to 4 carbons, cyano, vinyl,  $CF_3$ ,  $CF_2CF_3$ ,  $CH=CF_2$ ,  $OCH_3$ ,  
10  $OCF_3$ ,  $OCHF_2$ ,  $SCH_3$ ,  $S(O)CH_3$ , or  $S(O)_2CH_3$ ; and

$R^6$  is hydrogen, halogen, nitro, hydroxy, alkyl of 1 to 4 carbons, cyano,  $CF_3$ ,  $OCH_3$ ,  $OCF_3$ ,  $SCH_3$ ,  $S(O)CH_3$ , and  $S(O)_2CH_3$ .

15 4. A method of Claim 3 comprising: administering a therapeutically effective amount of a compound including isomers, enantiomers, diastereomers, tautomers, pharmaceutically acceptable salts, prodrugs and solvates wherein:

20  $R^2$  is 4-oxazolyl, substituted 4-oxazolyl, 5-oxazolyl, substituted 5-oxazolyl or heteroaryl;

$R^3$  is hydrogen, hydroxy, halogen, methyl or  $NR^8R^9$ ;

$R^4$  is hydrogen;

$R^5$  is halogen, methyl, ethyl, substituted alkenyl,

25 alkyne, OMe or  $OCF_3$ ; and

$R^6$  is hydrogen.

5. A method of Claim 4 comprising: administering a therapeutically effective amount of a compound including  
30 isomers, enantiomers, diastereomers, tautomers, pharmaceutically acceptable salts, prodrugs and solvates wherein:

$R^2$  is 4-oxazolyl, substituted 4-oxazolyl, 5-oxazolyl or substituted 5-oxazolyl;

35  $R^3$  is hydrogen, hydroxy, halogen or methyl;

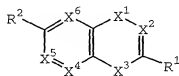
$R^4$  is hydrogen;

$R^5$  is halogen, methyl or OMe; and

$R^6$  is hydrogen.

- 5 6. A method of treating inosine monophosphate dehydrogenase associated disorders comprising: administering a therapeutically effective amount of a phosphodiesterase Type 4 inhibitor and a compound of formula (X):

10



(X)

including isomers, enantiomers, diastereomers, tautomers, pharmaceutically acceptable salts, prodrugs and solvates

- 15 thereof wherein:

$X^1$  is C=O, -S(O)-, or -S(O)<sub>2</sub>-;

$X^2$  is CR<sup>3</sup> or N;

$X^3$  is -NH-, -O-, or -S-;

$X^4$  is CR<sup>4</sup> or N;

- 20  $X^5$  is CR<sup>5</sup> or N;

$X^6$  is CR<sup>6</sup> or N;

$R^1$  is alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, NR<sup>8</sup>R<sup>9</sup>, SR<sup>20</sup>, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heterocycloalkyl, or heteroaryl;

- 25  $R^2$  is halogen, cyano, nitro, hydroxy, oxo (double bond is no longer present between CR<sup>2</sup> and X<sup>6</sup>), SR<sup>7</sup>, S(O)R<sup>7</sup>, SO<sub>2</sub>R<sup>7</sup>, SO<sub>2</sub>NR<sup>8</sup>R<sup>9</sup>, CO<sub>2</sub>R<sup>7</sup>, C(O)NR<sup>8</sup>R<sup>9</sup>, or heteroaryl;

$R^3$  is hydrogen, hydroxy, halogen, cyano, CO<sub>2</sub>R<sup>7</sup>, NR<sup>8</sup>R<sup>9</sup>, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, cycloalkyl, substituted

30

cycloalkyl, aryl, substituted aryl, heterocycloalkyl or heteroaryl;

$R^4$ ,  $R^5$ , and  $R^6$  are independently selected from the group consisting of hydrogen, halogen, nitro, cyano, 5 O- $R^7$ ,  $NR^8R^9$ ,  $SR^7$ ,  $S(O)R^7$ ,  $SO_2R^7$ ,  $SO_3R^7$ ,  $SO_2NR^8R^9$ ,  $CO_2R^7$ ,  $C(O)NR^8R^9$ ,  $C(O)alkyl$ ,  $C(O)substituted\ alkyl$ ,  $alkyl$ , substituted  $alkyl$ ,  $alkenyl$ , substituted  $alkenyl$ ,  $alkynyl$  and substituted  $alkynyl$ ;

$R^7$ ,  $R^{10}$ , and  $R^{11}$ , are independently selected from the 10 group consisting of hydrogen,  $alkyl$ , substituted  $alkyl$ ,  $alkenyl$ ,  $alkynyl$ ,  $cycloalkyl$ , substituted  $cycloalkyl$ ,  $C(O)alkyl$ ,  $C(O)substituted\ alkyl$ ,  $C(O)cycloalkyl$ ,  $C(O)substituted\ cycloalkyl$ ,  $C(O)aryl$ ,  $C(O)substituted\ aryl$ ,  $C(O)alkyl$ ,  $C(O)Osubstituted\ alkyl$ , 15  $C(O)heterocycloalkyl$ ,  $C(O)heteroaryl$ ,  $aryl$ , substituted  $aryl$ ,  $heterocycloalkyl$  and  $heteroaryl$ ;

$R^8$  and  $R^9$  are independently selected from the group consisting of hydrogen,  $alkyl$ , substituted  $alkyl$ ,  $cycloalkyl$ , substituted  $cycloalkyl$ ,  $alkenyl$ ,  $alkynyl$ , 20  $C(O)alkyl$ ,  $C(O)substituted\ alkyl$ ,  $C(O)cycloalkyl$ ,  $C(O)substituted\ cycloalkyl$ ,  $C(O)aryl$ ,  $C(O)substituted\ aryl$ ,  $C(O)alkyl$ ,  $C(O)Osubstituted\ alkyl$ ,  $C(O)heterocycloalkyl$ ,  $C(O)heteroaryl$ ,  $aryl$ , substituted  $aryl$ ,  $heterocycloalkyl$ , and  $heteroaryl$  or  $R^8$  and  $R^9$  taken 25 together with the nitrogen atom to which they are attached complete a heterocycloalkyl or heteroaryl ring;

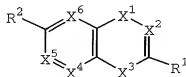
$R^{20}$  is  $alkyl$ , substituted  $alkyl$ ,  $cycloalkyl$ ,  $aryl$ , substituted  $aryl$ ,  $heteroaryl$  or  $heterocycloalkyl$ ;

$R^3$  and  $R^1$  may be taken together with the carbon atoms 30 to which they are attached to form a monocyclic or substituted monocyclic ring system of 5 or 6 carbon atoms; and

$R^4$  and  $R^5$  may be joined together by the chain -O-CH<sub>2</sub>-O- or -O-CH<sub>2</sub>-CH<sub>2</sub>-O-.

7. A method for the treatment or prevention of allograft rejection comprising: administering a therapeutically effective amount of a phosphodiesterase Type 4 inhibitor and a compound of formula (X):

5



(X)

including isomers, enantiomers, diastereomers, tautomers, pharmaceutically acceptable salts, prodrugs and solvates

10 thereof wherein:

$X^1$  is  $C=O$ ,  $-S(O)-$ , or  $-S(O)_2-$ ;

$X^2$  is  $CR^3$  or N;

$X^3$  is  $-NH-$ ,  $-O-$ , or  $-S-$ ;

$X^4$  is  $CR^4$  or N;

15  $X^5$  is  $CR^5$  or N;

$X^6$  is  $CR^6$  or N;

$R^1$  is alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl,  $NR^8R^9$ ,  $SR^{20}$ , cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heterocycloalkyl, or heteroaryl;

$R^2$  is halogen, cyano, nitro, hydroxy, oxo (double bond is no longer present between  $CR^2$  and  $X^6$ ),  $SR^7$ ,  $S(O)R^7$ ,  $SO_2R^7$ ,  $SO_2NR^8R^9$ ,  $CO_2R^7$ ,  $C(O)NR^8R^9$ , or heteroaryl;

$R^3$  is hydrogen, hydroxy, halogen, cyano,  $CO_2R^7$ ,  $NR^8R^9$ , alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heterocycloalkyl or heteroaryl;

$R^4$ ,  $R^5$ , and  $R^6$  are independently selected from the  
30 group consisting of hydrogen, halogen, nitro, cyano,

$O-R^7$ ,  $NR^8R^9$ ,  $SR^7$ ,  $S(O)R^7$ ,  $SO_2R^7$ ,  $SO_3R^7$ ,  $SO_2NR^8R^9$ ,  $CO_2R^7$ ,  $C(O)NR^8R^9$ ,  $C(O)alkyl$ ,  $C(O)substituted\ alkyl$ ,  $alkyl$ ,  $substituted\ alkyl$ ,  $alkenyl$ ,  $substituted\ alkenyl$ ,  $alkynyl$  and  $substituted\ alkynyl$ ;

- 5  $R^7$ ,  $R^{10}$ , and  $R^{11}$ , are independently selected from the group consisting of hydrogen,  $alkyl$ ,  $substituted\ alkyl$ ,  $alkenyl$ ,  $alkynyl$ ,  $cycloalkyl$ ,  $substituted\ cycloalkyl$ ,  $C(O)alkyl$ ,  $C(O)substituted\ alkyl$ ,  $C(O)cycloalkyl$ ,  $C(O)substituted\ cycloalkyl$ ,  $C(O)aryl$ ,  $C(O)substituted\ aryl$ ,  
 10  $C(O)Oalkyl$ ,  $C(O)Osubstituted\ alkyl$ ,  $C(O)heterocycloalkyl$ ,  $C(O)heteroaryl$ ,  $aryl$ ,  $substituted\ aryl$ ,  $heterocycloalkyl$  and  $heteroaryl$ ;

- $R^8$  and  $R^9$  are independently selected from the group consisting of hydrogen,  $alkyl$ ,  $substituted\ alkyl$ ,  
 15  $cycloalkyl$ ,  $substituted\ cycloalkyl$ ,  $alkenyl$ ,  $alkynyl$ ,  $C(O)alkyl$ ,  $C(O)substituted\ alkyl$ ,  $C(O)cycloalkyl$ ,  $C(O)substituted\ cycloalkyl$ ,  $C(O)aryl$ ,  $C(O)substituted\ aryl$ ,  $C(O)Oalkyl$ ,  $C(O)Osubstituted\ alkyl$ ,  $C(O)heterocycloalkyl$ ,  $C(O)heteroaryl$ ,  $aryl$ ,  $substituted\ aryl$ ,  $heterocycloalkyl$ , and  $heteroaryl$  or  $R^8$  and  $R^9$  taken together with the nitrogen atom to which they are attached complete a heterocycloalkyl or heteroaryl ring;

$R^{20}$  is  $alkyl$ ,  $substituted\ alkyl$ ,  $cycloalkyl$ ,  $aryl$ ,  $substituted\ aryl$ ,  $heteroaryl$  or  $heterocycloalkyl$ ;

- 25  $R^3$  and  $R^1$  may be taken together with the carbon atoms to which they are attached to form a monocyclic or substituted monocyclic ring system of 5 or 6 carbon atoms; and

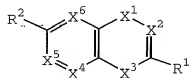
- $R^4$  and  $R^5$  may be joined together by the chain  
 30  $-O-CH_2-O-$  or  $-O-CH_2-CH_2-O-$ .

8. A method of Claim 6 wherein: the phosphodiesterase Type 4 inhibitor is Rolipram.



9. A method of Claim 6 wherein: the phosphodiesterase Type 4 inhibitor is [4-[3-(cyclopentyloxy)-4-methoxy-phenyl]-2-pyrrolidinone].

- 5 10. A compound of formula (I)



(I)

including isomers, enantiomers, diastereomers, tautomers,  
10 pharmaceutically acceptable salts, prodrugs and solvates thereof wherein:

X<sup>1</sup> is C=O, -S(O)-, or -S(O)<sub>2</sub>-;

X<sup>2</sup> is CR<sup>3</sup> or N;

X<sup>3</sup> is -NH-, -O-, or -S-;

- 15 X<sup>4</sup> is CR<sup>4</sup> or N;

X<sup>5</sup> is CR<sup>5</sup> or N;

X<sup>6</sup> is CR<sup>6</sup> or N;

R<sup>1</sup> is alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, cycloalkyl,  
20 substituted cycloalkyl, aryl, substituted aryl, heterocycloalkyl, or heteroaryl;

R<sup>2</sup> is cyano, hydroxy, oxo (double bond is no longer present between CR<sup>2</sup> and X<sup>6</sup>), SR<sup>7</sup>, S(O)R<sup>7</sup>, SO<sub>2</sub>R<sup>7</sup>, SO<sub>2</sub>NR<sup>8</sup>R<sup>9</sup>, CO<sub>2</sub>R<sup>7</sup>, C(O)NR<sup>8</sup>R<sup>9</sup>, or heteroaryl;

- 25 R<sup>3</sup> is hydrogen, hydroxy, halogen, cyano, CO<sub>2</sub>R<sup>7</sup>, NR<sup>8</sup>R<sup>9</sup>, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heterocycloalkyl or heteroaryl;

- 30 R<sup>4</sup>, R<sup>5</sup>, and R<sup>6</sup> are independently selected from the group consisting of hydrogen, halogen, nitro, cyano,

O-R<sup>7</sup>, NR<sup>8</sup>R<sup>9</sup>, SR<sup>7</sup>, S(O)R<sup>7</sup>, SO<sub>2</sub>R<sup>7</sup>, SO<sub>3</sub>R<sup>7</sup>, SO<sub>2</sub>NR<sup>8</sup>R<sup>9</sup>, CO<sub>2</sub>R<sup>7</sup>, C(O)NR<sup>8</sup>R<sup>9</sup>, C(O)alkyl, C(O)substituted alkyl, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl and substituted alkynyl;

- 5 R<sup>7</sup>, R<sup>10</sup>, and R<sup>11</sup>, are independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, alkynyl, cycloalkyl, substituted cycloalkyl, C(O)alkyl, C(O)substituted alkyl, C(O)cycloalkyl, C(O)substituted cycloalkyl, C(O)aryl, C(O)substituted aryl, 10 C(O)Oalkyl, C(O)Osubstituted alkyl, C(O)heterocycloalkyl, C(O)heteroaryl, aryl, substituted aryl, heterocycloalkyl and heteroaryl;

- R<sup>8</sup> and R<sup>9</sup> are independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, 15 cycloalkyl, substituted cycloalkyl, alkenyl, alkynyl, C(O)alkyl, C(O)substituted alkyl, C(O)cycloalkyl, C(O)substituted cycloalkyl, C(O)aryl, C(O)substituted aryl, C(O)Oalkyl, C(O)Osubstituted alkyl, C(O)heterocycloalkyl, C(O)heteroaryl, aryl, substituted 20 aryl, heterocycloalkyl, and heteroaryl or R<sup>8</sup> and R<sup>9</sup> taken together with the nitrogen atom to which they are attached complete a heterocycloalkyl or heteroaryl ring;

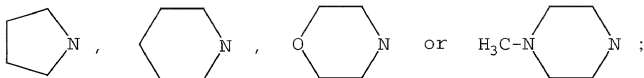
- R<sup>3</sup> and R<sup>1</sup> may be taken together with the carbon atoms to which they are attached to form a monocyclic or 25 substituted monocyclic ring system of 5 or 6 carbon atoms; and

R<sup>4</sup> and R<sup>5</sup> may be joined together by the chain -O-CH<sub>2</sub>-O- or -O-CH<sub>2</sub>-CH<sub>2</sub>-O-;

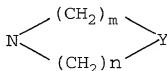
- 30 with the following provisos:

(c) when X<sup>1</sup> is C=O, X<sup>2</sup> is CR<sup>3</sup>, X<sup>3</sup> is NH, X<sup>4</sup> is CR<sup>4</sup>, X<sup>5</sup> is CR<sup>5</sup>, X<sup>6</sup> is CR<sup>6</sup>, R<sup>1</sup> is substituted or meta unsubstituted phenyl, R<sup>3</sup> is H, R<sup>4</sup> is H, R<sup>5</sup> is H and R<sup>6</sup> is H, then R<sup>2</sup> is not PhCONH,

35



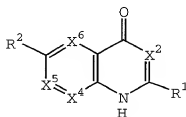
- (d) when  $X^1$  is C=O,  $X^2$  is  $CR^3$ ,  $X^3$  is NH,  $X^4$  is  $CR^4$ ,  $X^5$  is  $CR^5$ ,  $X^6$  is  $CR^6$ ,  $R^1$  is phenyl substituted with H, F, Cl, Br, I,  $CH_3$ ,  $CF_3$ , OH,  $OCH_3$ ,  $OCF_3$ ,  $OCH_2CH_3$ ,  $NH_2$ ,  $NHCH_3$ ,  $N(CH_3)_2$ , O-benzyl,  $-C(=O)-R_0$ , or  $-C(=O)-OR_0$  and  $R_0$  is a lower alkyl group,  $R^3$  is H,  $R^4$  is H,  $R^5$  is H and  $R^6$  is H, then  $R^2$  is not



where Y is  $CH_2$ , O or S, m and n are each greater than 1, and the sum of m and n is between 3 and 6; and

- (c) when  $R^2$  is heteroaryl, at least one of the heteroatoms must be O;

11. A compound of Claim 10 of formula (II)

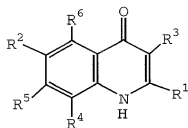


(II)

including isomers, enantiomers, diastereomers, tautomers, pharmaceutically acceptable salts, prodrugs and solvates thereof wherein:

$R^2$  is a monocyclic substituted or unsubstituted heteroaryl group.

12. A compound of Claim 11 of formula (III)



(III)

- 5 including isomers, enantiomers, diastereomers, tautomers, pharmaceutically acceptable salts, prodrugs and solvates thereof wherein:

R<sup>2</sup> is 4-oxazolyl, substituted 4-oxazolyl, 5-oxazolyl, or substituted 5-oxazolyl;

- 10 R<sup>3</sup> is hydrogen, hydroxy, NR<sup>8</sup>R<sup>9</sup>, alkyl of 1 to 4 carbons, alkenyl of 2 to 4 carbons, alkynyl of 2 to 4 carbons, substituted alkyl of 1 to 4 carbons, phenyl, substituted phenyl, cycloalkyl of 5 to 7 carbons, substituted cycloalkyl of 5 to 7 carbons, monocyclic heterocycloalkyl and monocyclic heteroaryl;

15 R<sup>4</sup> is hydrogen, halogen, nitro, hydroxy, alkyl of 1 to 4 carbons, cyano, CF<sub>3</sub>, OCF<sub>3</sub>, OCH<sub>3</sub>, SCH<sub>3</sub>, S(O)CH<sub>3</sub>, or S(O)<sub>2</sub>CH<sub>3</sub>;

- 20 R<sup>5</sup> is hydrogen, halogen, nitro, hydroxy, alkyl of 1 to 4 carbons, cyano, vinyl, CF<sub>3</sub>, CF<sub>2</sub>CF<sub>3</sub>, CH=CF<sub>2</sub>, OCH<sub>3</sub>, OCF<sub>3</sub>, OCHF<sub>2</sub>, SCH<sub>3</sub>, S(O)CH<sub>3</sub>, or S(O)<sub>2</sub>CH<sub>3</sub>; and

R<sup>6</sup> is hydrogen, halogen, nitro, hydroxy, alkyl of 1 to 4 carbons, cyano, CF<sub>3</sub>, OCH<sub>3</sub>, OCF<sub>3</sub>, SCH<sub>3</sub>, S(O)CH<sub>3</sub>, and S(O)<sub>2</sub>CH<sub>3</sub>.

- 25 13. A compound of Claim 12 including isomers, enantiomers, diastereomers, tautomers, pharmaceutically acceptable salts, prodrugs and solvates wherein:

$R^2$  is 4-oxazolyl, substituted 4-oxazolyl, 5-oxazolyl, substituted 5-oxazolyl or heteroaryl;

$R^3$  is hydrogen, hydroxy, halogen, methyl or  $NR^8R^9$ ;

$R^4$  is hydrogen;

5  $R^5$  is halogen, methyl, ethyl, substituted alkenyl, alkyne, OMe or  $OCF_3$ ; and

$R^6$  is hydrogen.

14. A compound of Claim 13 including isomers,  
10 enantiomers, diastereomers, tautomers, pharmaceutically acceptable salts, prodrugs and solvates wherein:

$R^2$  is 4-oxazolyl, substituted 4-oxazolyl, 5-oxazolyl or substituted 5-oxazolyl;

$R^3$  is hydrogen, hydroxy, halogen or methyl;

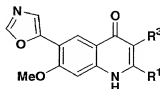
15  $R^4$  is hydrogen;

$R^5$  is halogen, methyl or OMe; and

$R^6$  is hydrogen.

15. A compound of Claim 10 of formula (V)

20



(V)

including isomers, enantiomers, diastereomers, tautomers,  
pharmaceutically acceptable salts, prodrugs and solvates

25 selected from:

a compound of formula (V) wherein:

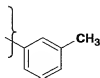
$R^1$  is



and  $R^3$  is hydrogen;

- 5 a compound of formula (V) wherein:

$R^1$  is



and  $R^3$  is hydrogen;

10

- a compound of formula (V) wherein:

$R^1$  is



15

and  $R^3$  is hydrogen;

- a compound of formula (V) wherein:

$R^1$  is  $CH_3$  and  $R^3$  is hydrogen;

- 20 a compound of formula (V) wherein:

$R^1$  is



and  $R^3$  is  $CH_3$ ;

25

- a compound of formula (V) wherein:

$R^1$  is

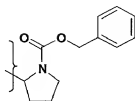


30

and  $R^3$  is hydrogen;

a compound of formula (V) wherein:

$R^1$  is



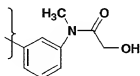
5

and  $R^3$  is hydrogen;

a compound of formula (V) wherein:

$R^1$  is

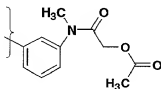
10



and  $R^3$  is hydrogen;

15 a compound of formula (V) wherein:

$R^1$  is

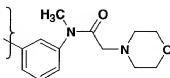


and  $R^3$  is hydrogen;

20

a compound of formula (V) wherein:

$R^1$  is

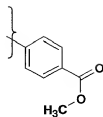


25

and  $R^3$  is hydrogen;

a compound of formula (V) wherein:

R<sup>1</sup> is

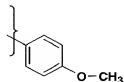


and R<sup>3</sup> is hydrogen;

5

a compound of formula (V) wherein:

R<sup>1</sup> is



10

and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

R<sup>1</sup> is

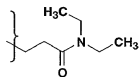


15

and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

R<sup>1</sup> is



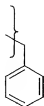
20

and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:



R<sup>1</sup> is



5 and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

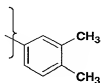
R<sup>1</sup> is



10 and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

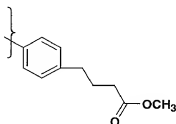
R<sup>1</sup> is



15 and R<sup>3</sup> is hydrogen;

20 a compound of formula (V) wherein:

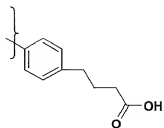
R<sup>1</sup> is



25 and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

R<sup>1</sup> is

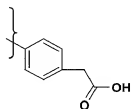


and R<sup>3</sup> is hydrogen;

5

a compound of formula (V) wherein:

R<sup>1</sup> is



10

and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

R<sup>1</sup> is



15

and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

20

R<sup>1</sup> is

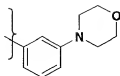


and R<sup>3</sup> is hydrogen;

25

a compound of formula (V) wherein:

R<sup>1</sup> is



5 and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

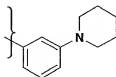
R<sup>1</sup> is



10 and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

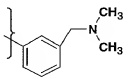
R<sup>1</sup> is



15 and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

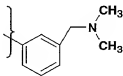
R<sup>1</sup> is



20 and R<sup>3</sup> is hydrogen;

25 a compound of formula (V) wherein:

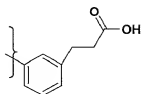
R<sup>1</sup> is



and  $R^3$  is Br;

a compound of formula (V) wherein:

$R^1$  is



5

and  $R^3$  is hydrogen;

a compound of formula (V) wherein:

$R^1$  is



10

and  $R^3$  is hydrogen;

a compound of formula (V) wherein:

$R^1$  is



15

and  $R^3$  is hydrogen;

a compound of formula (V) wherein:

$R^1$  is

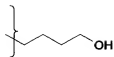


25

and  $R^3$  is hydrogen;

30 a compound of formula (V) wherein:

R<sup>1</sup> is



5 and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

R<sup>1</sup> is



10

and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

15 R<sup>1</sup> is



and R<sup>3</sup> is hydrogen;

20 a compound of formula (V) wherein:

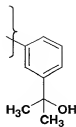
R<sup>1</sup> is



25 and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

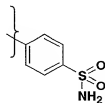
R<sup>1</sup> is



5 and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

R<sup>1</sup> is



10

and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

15 R<sup>1</sup> is



and R<sup>3</sup> is hydrogen;

20

a compound of formula (V) wherein:

R<sup>1</sup> is



25

and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

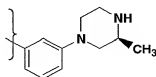
R<sup>1</sup> is



5 and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

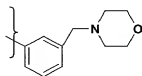
R<sup>1</sup> is



10 and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

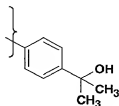
R<sup>1</sup> is



15 and R<sup>3</sup> is hydrogen;

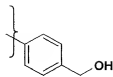
a compound of formula (V) wherein:

R<sup>1</sup> is



20 and R<sup>3</sup> is hydrogen;

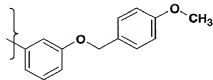
25 a compound of formula (V) wherein:

$\mathbb{R}^1$  is

and  $R^3$  is hydrogen;

5

a compound of formula (V) wherein:

 $\mathbb{R}^1$  is

10

and  $R^3$  is hydrogen;

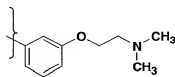
a compound of formula (V) wherein:

 $\mathbb{R}^1$  is

15

and  $R^3$  is hydrogen;

a compound of formula (V) wherein:

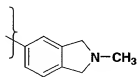
 $\mathbb{R}^1$  is

20

and  $R^3$  is hydrogen;

a compound of formula (V) wherein:

25

 $\mathbb{R}^1$  is



and  $R^3$  is hydrogen;

a compound of formula (V) wherein:

$R^1$  is

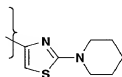


5

and  $R^3$  is hydrogen;

10 a compound of formula (V) wherein:

$R^1$  is

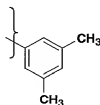


15

and  $R^3$  is hydrogen;

a compound of formula (V) wherein:

$R^1$  is

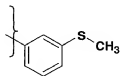


20

and  $R^3$  is hydrogen;

a compound of formula (V) wherein:

$R^1$  is

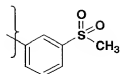


25

and  $R^3$  is hydrogen;

a compound of formula (V) wherein:

R<sup>1</sup> is

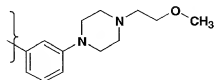


and R<sup>3</sup> is hydrogen;

5

a compound of formula (V) wherein:

R<sup>1</sup> is

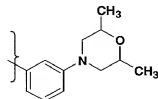


10

and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

R<sup>1</sup> is

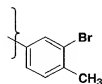


15

and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

R<sup>1</sup> is

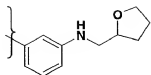


20

and R<sup>3</sup> is hydrogen;

25 a compound of formula (V) wherein:

R<sup>1</sup> is

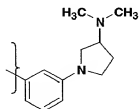


and R<sup>3</sup> is hydrogen;

5

a compound of formula (V) wherein:

R<sup>1</sup> is

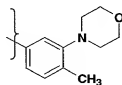


10

and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

R<sup>1</sup> is

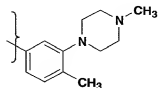


15

and R<sup>3</sup> is hydrogen;

20 a compound of formula (V) wherein:

R<sup>1</sup> is

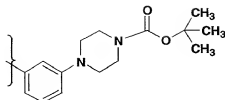


and R<sup>3</sup> is hydrogen;

25

a compound of formula (V) wherein:

R<sup>1</sup> is

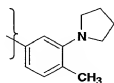


and R<sup>3</sup> is hydrogen;

5

a compound of formula (V) wherein:

R<sup>1</sup> is

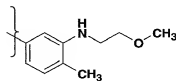


10

and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

R<sup>1</sup> is

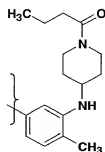


15

and R<sup>3</sup> is hydrogen;

20 a compound of formula (V) wherein:

R<sup>1</sup> is

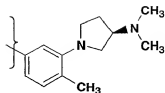


and R<sup>3</sup> is hydrogen;

25

a compound of formula (V) wherein:

R<sup>1</sup> is

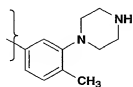


and R<sup>3</sup> is hydrogen;

5

a compound of formula (V) wherein:

R<sup>1</sup> is

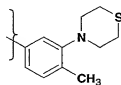


10

and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

R<sup>1</sup> is

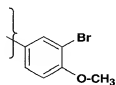


15

and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

R<sup>1</sup> is

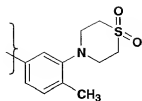


20

and R<sup>3</sup> is hydrogen;

25 a compound of formula (V) wherein:

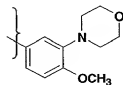
R<sup>1</sup> is



5 and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

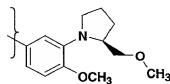
R<sup>1</sup> is



10 and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

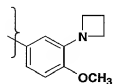
15 R<sup>1</sup> is



and R<sup>3</sup> is hydrogen;

20 a compound of formula (V) wherein:

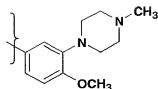
R<sup>1</sup> is



25 and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

R<sup>1</sup> is

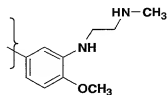


and R<sup>3</sup> is hydrogen;

5

a compound of formula (V) wherein:

R<sup>1</sup> is

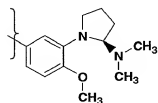


10

and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

R<sup>1</sup> is

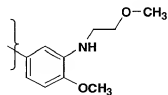


15

and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

R<sup>1</sup> is

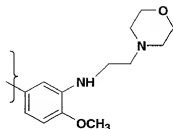


20

and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

R<sup>1</sup> is

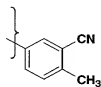


and R<sup>3</sup> is hydrogen;

5

a compound of formula (V) wherein:

R<sup>1</sup> is

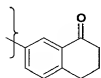


10

and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

R<sup>1</sup> is

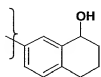


15

and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

R<sup>1</sup> is



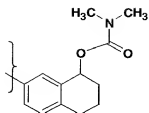
20

and R<sup>3</sup> is hydrogen;

25 a compound of formula (V) wherein:



R<sup>1</sup> is

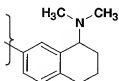


and R<sup>3</sup> is hydrogen;

5

a compound of formula (V) wherein:

R<sup>1</sup> is



and R<sup>3</sup> is hydrogen;

10

a compound of formula (V) wherein:

R<sup>1</sup> is



and R<sup>3</sup> is hydrogen;

15

a compound of formula (V) wherein:

R<sup>1</sup> is



and R<sup>3</sup> is hydrogen;

20

a compound of formula (V) wherein:

R<sup>1</sup> is

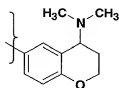


25

and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

5 R<sup>1</sup> is



and R<sup>3</sup> is hydrogen;

10 a compound of formula (V) wherein:

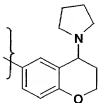
R<sup>1</sup> is



and R<sup>3</sup> is hydrogen;

15 a compound of formula (V) wherein:

R<sup>1</sup> is



and R<sup>3</sup> is hydrogen;

20

a compound of formula (V) wherein:

R<sup>1</sup> is



25

and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

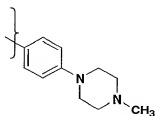
R<sup>1</sup> is



5 and R<sup>3</sup> is hydrogen;

a compound of formula (V) wherein:

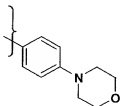
R<sup>1</sup> is



10 and R<sup>3</sup> is hydrogen;

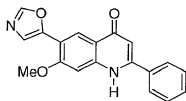
and a compound of formula (V) wherein:

R<sup>1</sup> is

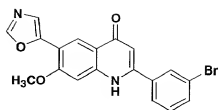


15 and R<sup>3</sup> is hydrogen.

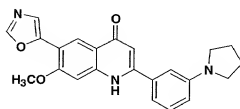
16. A compound of Claim 10 including isomers,  
20 enantiomers, diastereomers, tautomers, pharmaceutically  
acceptable salts, prodrugs and solvates thereof selected  
from:



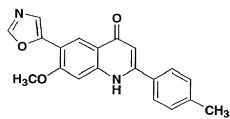
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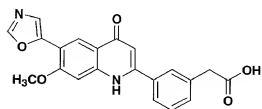
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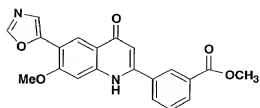
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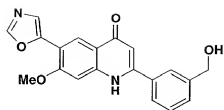


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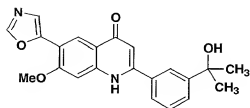


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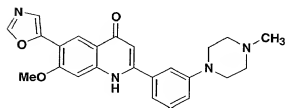




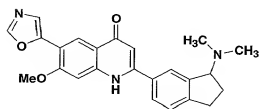
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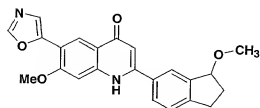
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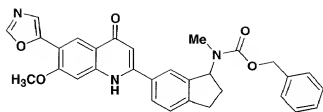
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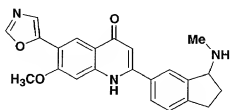
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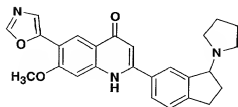
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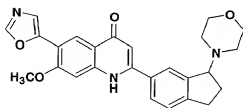
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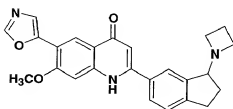
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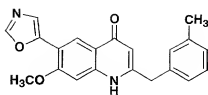
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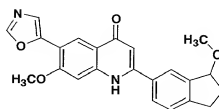
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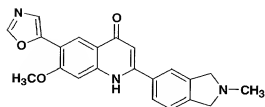
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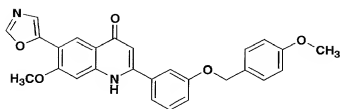
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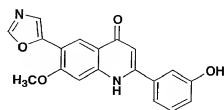
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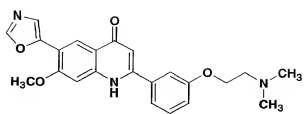
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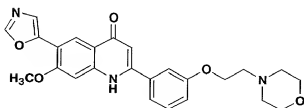
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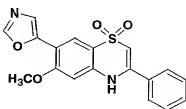
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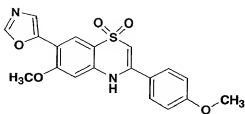
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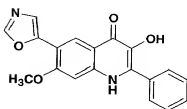
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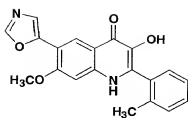


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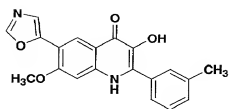


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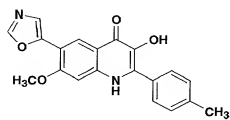




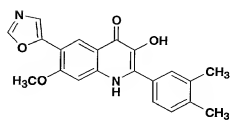
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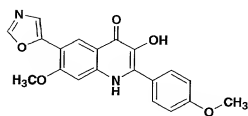
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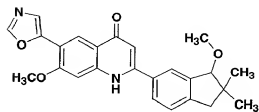
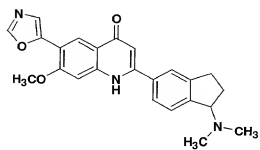
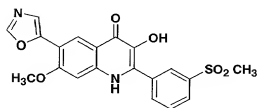
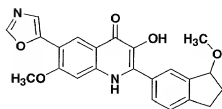
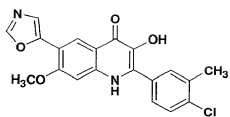


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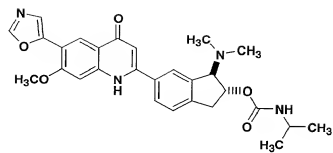
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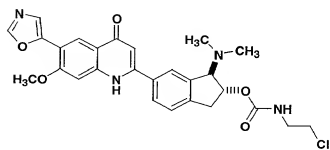
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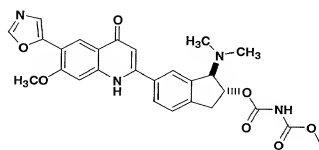




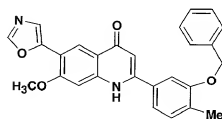
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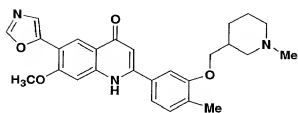
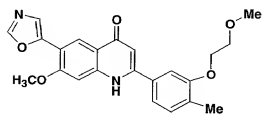
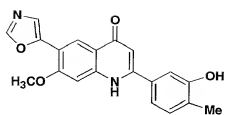
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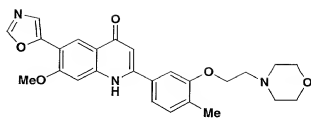


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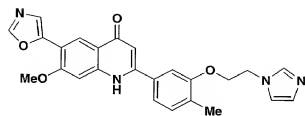


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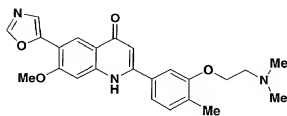




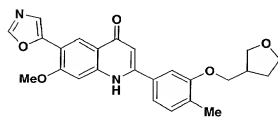
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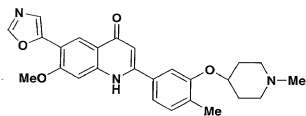
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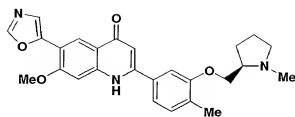
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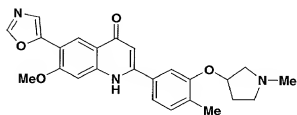
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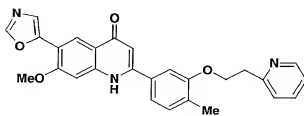
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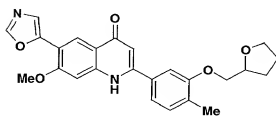
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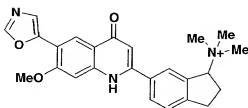
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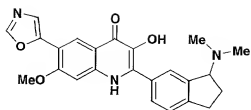
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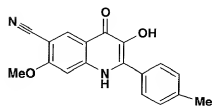
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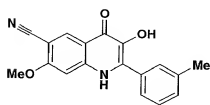
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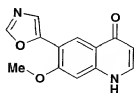
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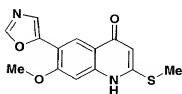
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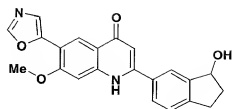


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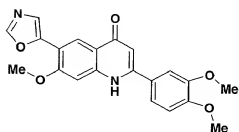


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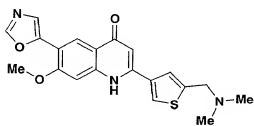




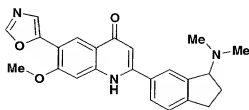
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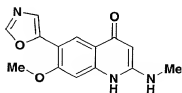
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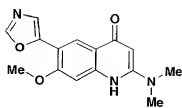
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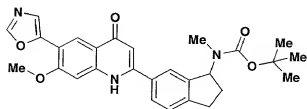
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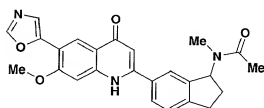
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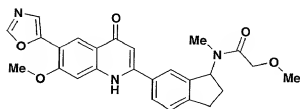
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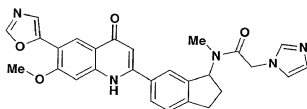
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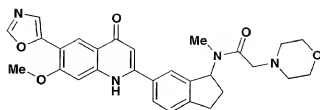
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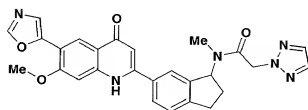
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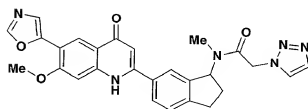
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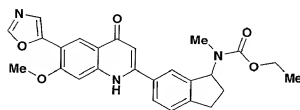
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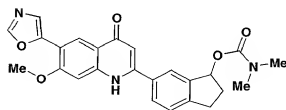
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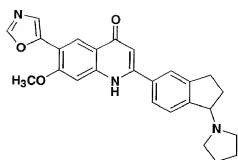
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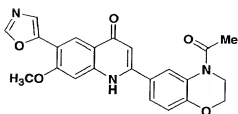
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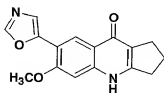
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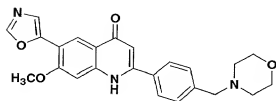


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15

and



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17. A pharmaceutical composition comprising a compound  
of Claim 10 and a pharmaceutically acceptable  
carrier.

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18. A pharmaceutical composition comprising a compound  
of Claim 11 and a pharmaceutically acceptable carrier.

19. A pharmaceutical composition comprising a compound  
5 of Claim 12 and a pharmaceutically acceptable carrier.

20. A pharmaceutical composition comprising a compound  
of Claim 13 and a pharmaceutically acceptable carrier.

10 21. A pharmaceutical composition comprising a compound  
of Claim 14 and a pharmaceutically acceptable carrier.

22. A pharmaceutical composition comprising a compound  
of Claim 15 and a pharmaceutically acceptable carrier.

15 23. A pharmaceutical composition comprising a compound  
Claim 16 and a pharmaceutically acceptable carrier.

24. A method of treating inosine monophosphate  
20 dehydrogenase associated disorders comprising:  
administering an therapeutically effective amount of the  
composition of Claim 17.

25 25. A method of treating inosine monophosphate  
dehydrogenase associated disorders comprising:  
administering a therapeutically effective amount of the  
composition of Claim 17 and another agent known to be  
useful in treatment of such disorders.

30 26. A method of treating inosine monophosphate  
dehydrogenase associated disorders comprising:  
administering a therapeutically effective amount of the  
pharmaceutical composition of Claim 17 and a  
phosphodiesterase Type 4 inhibitor.

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27. A method for the treatment or prevention of allograft rejection comprising: administering a therapeutically effective amount of the pharmaceutical composition of Claim 17 and a phosphodiesterase Type 4 inhibitor.
28. A method of Claim 7 wherein: the phosphodiesterase Type 4 inhibitor is Rolipram.
29. A method of Claim 7 wherein: the phosphodiesterase Type 4 inhibitor is [4-[3-(cyclopentyloxy)-4-methoxy-phenyl]-2-pyrrolidinone].